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PATENT APPLICATION TRANSMITTAL LETTER

Attorney Docket No.: R-98-5670-U.1-CIP

THE COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231-9988

Sir:

Transmitted herewith for filing if the patent application of

INVENTOR(S): Ralph HEIDLER

ASSIGNEE: Ralph HEIDLER and Walter RIDDLE (A Florida Partnership)

FOR: "Flexible Mixing Mat And Method Of Use"

Enclosed are:

(XX) FOUR (4) Sheets of Drawing Figures (FIGURES 1 - 12).

( ) An assignment of the invention to \_\_\_\_\_

( ) A certified copy of a \_\_\_\_\_ application.

( ) An associate power of attorney.

(XX) Verified statements to establish small entity status under 37 CFR 1.9 and 37 CFR 1.27.

The filing fee has been calculated as shown below:

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TOTAL CLAIMS	21 - 20 =	* 1
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Attorney Docket No.: R-98-5670-U.1-CIP

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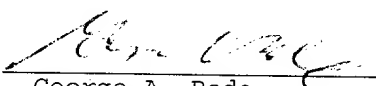
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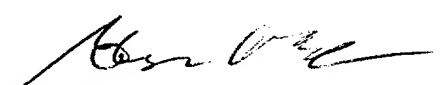
July 27, 2000

Date

  
George A. Bode  
Attorney of Record  
Reg. No. 30,028

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Applicant or Patentee: Ralph HEIDLER Attorney's  
Serial or Patent No.: \_\_\_\_\_ Docket  
Filed or Issued: \_\_\_\_\_ No.: R-98-5670-U.1-CIP  
For: "Flexible Mixing Mat And Method Of Use"

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled same as "For" above, described in

- (X) the specification filed herewith.  
( ) application serial no. \_\_\_\_\_, filed \_\_\_\_\_.  
( ) patent no. \_\_\_\_\_, issued \_\_\_\_\_.

I have not assigned, granted, conveyed, or licensed and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

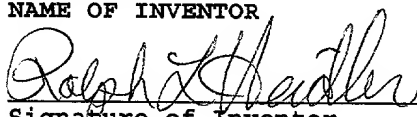
- ( ) no such person, concern or organization.  
(X) persons, concerns or organizations listed below:\*

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).

FULL NAME: RALPH HEIDLER and WALTER RIDDLE (A Florida Partnership)  
ADDRESS: 702 West Martin Luther King Blvd. Plant City, Florida 33566  
( ) INDIVIDUAL (X) SMALL BUSINESS CONCERN ( ) NON-PROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issued thereon, or any patent to which this verified statement is directed.

Ralph HEIDLER  
NAME OF INVENTOR NAME OF INVENTOR NAME OF INVENTOR  
  
Signature of Inventor Signature of Inventor Signature of Inventor  
7-11-00  
Date Date Date

Applicant or Patentee: Ralph HEIDLER

Serial or Patent No.: \_\_\_\_\_

Attorney's

Filed or Issued: \_\_\_\_\_

Docket No.: R-98-5670-U.1-CIP

Title: "Flexible Mixing Mat And Method Of Use"

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN

I hereby declare that I am

( ) the owner of the small business concern identified below:

(X) an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN: RALPH HEIDLER and WALTER RIDDLE (A Florida Partnership)

ADDRESS OF SMALL BUSINESS CONCERN: 702 West Martin Luther King Blvd.  
Plant City, Florida 33566

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled  
"Flexible Mixing Mat And Method Of Use"

by inventor(s) Ralph HEIDLER  
described in \_\_\_\_\_

(X) the specification filed herewith

( ) application serial no. \_\_\_\_\_, filed \_\_\_\_\_

( ) patent no. \_\_\_\_\_, issued \_\_\_\_\_

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below\* and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c), if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a non-profit organization under 37 CFR 1.9(e). \*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

( ) INDIVIDUAL ( ) SMALL BUSINESS CONCERN ( ) NON-PROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issued thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Walter RIDDLE

TITLE OF PERSON OTHER THAN OWNER Managing Partner

ADDRESS OF PERSON SIGNING 702 West Martin Luther King Blvd. Plant City, Florida 33566

SIGNATURE Walter A. Riddle

DATE 7-11-00

APPLICATION FOR  
U.S. LETTERS PATENT  
FOR

**"Flexible Mixing Mat And Method Of Use"**

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This application is a continuation-in-part application of a co-pending patent application by the same inventor bearing U.S. Serial No. 09/365,630, filed August 2, 1999, and entitled **"Flexible Mixing Mat Including Fanning Corners With Handles And Method Of Use"**. The entire application U.S. Serial No. 09/365,630 is incorporated herein by reference as if set forth in full herein.

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Date of Deposit: June 27, 2000

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George A. Bode, Esq. - Reg. No. 30,028

"Flexible Mixing Mat And Method Of Use"

This application is a continuation-in-part application of a co-pending patent application by the same inventor bearing U.S. Serial No. 09/365,630, filed August 2, 1999, and entitled "Flexible Mixing Mat Including Fanning Corners With Handles And Method Of Use". The entire application U.S. Serial No. 09/365,630 is incorporated herein by reference as if set forth in full herein.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to mixing mats such as for mixing cement and, more particularly, to a flexible mixing mat including fanning corners with handles.

2. General Background

Supplies for do-it-yourself home improvements has become big business and readily accessible to all. Most supply depots even provide instructions for carrying out just about any home improvement imaginable. However, some of the home improvements may require complex machinery for preparing the materials. One such material is cement. Cement can be mixed in small batches for

creating small foundations or other structures as desired. However, the cement must be mixed. Typically cement is a powdery composition which is to be mixed with water to form the cement. However, as the powdery  
5 composition must be mixed to fully dissolve all the powder of the composition.

Several apparatuses have been patented which are aimed at cement mixing devices.

U.S. Patent No. 5,743,636, issued to W.L. Payne,  
10 entitled "MIXING MAT FOR CONCRETE," discloses an apparatus and a method for mixing dry pre-blended cement compositions. The apparatus comprises a flexible mixing mat (being of either a rectangular or ovoid shape) having a central basin, a skirt, pouring lip and a handle in  
15 each of the corners near the mat's edge. The method or process includes mixing water with a pre-blended bag of cement in the central basin, then having two persons pick up mat by the corner handles and agitate the mixture by raising and lowering the handles and finally pouring the  
20 mixture from the mat via the pouring lip.

International Application (PCT) Publication No. WO 89/00884 filed by K. Eriksson, entitled "MIXING DEVICE,"

discloses an apparatus and method comprising a tube or mat having holes which form handles at the ends of the tube so that a batch of cement placed in the interior of the tube can be mixed by manually agitating the tube.

5 U.S. Patents No. 3,860,219, entitled "PROCESS FOR MANUALLY MIXING CEMENT," and No. 4,470,703, entitled "PROCESS FOR MIXING AND RETARDING CURE OF CEMENT," both of which are issued to B.W. Nickerson, disclose processes for manually mixing batches of dry cement and water in a  
10 pliable bag closed before mixing.

Other patents in the art include U.S. Patent No. 2,323,444, issued to Rochford et al., entitled "MIXING MACHINE" and U.S. Patent No. 5,290,100, issued to Kleinbans, entitled "METHOD OF MIXING PROPELLANT CHARGE  
15 POWDER RODS" which do not meet the needs of the present invention.

#### SUMMARY OF THE PRESENT INVENTION

The preferred embodiment of the flexible mixing mat of the present invention solves the aforementioned  
20 problems in a straight forward and simple manner.

Broadly, what is provided is a flexible mixing mat comprising: a geometrically-shaped planar substrate



having four corner areas; four expandable corners coupled to said four corner areas, respectively; and, handle means provided in a respective one of said four expandable corners from which said geometrically-shaped planar substrate is adapted to be lifted. The handle means can comprise: oblong apertures wherein a respective oblong aperture is formed in a respective one of said four expandable corners from which said geometrically-shaped planar substrate is adapted to be lifted; or, U-shaped channels connected to a respective one of said four expandable corners by fastener means, such as pins or plugs.

In view of the above, an object of the present invention is to provide each corner area of said four corner areas of said geometrically-shaped planar substrate with a triangularly-shaped notch having an apex located a distance from an edge of said geometrically-shaped planar substrate. Moreover, each expandable corner of said four expandable corners comprises a pleated flexible member expandable greater than said triangularly-shaped notch wherein said pleated flexible member has formed therein said respective oblong aperture

and wherein a center of a longitudinal length of said oblong aperture is substantially aligned with said apex.

Another object of the present invention is to provide a flexible mixing mat with a geometrically-shaped planar substrate which is rectangularly shaped.

A further object of the present invention is to provide a flexible mixing mat with a triangularly-shaped notch which is an acute angle notch having one leg perpendicular to a short edge of the rectangular planar substrate.

It is a still further object of the present invention to provide a flexible mixing mat which is made of flexible and waterproof material such as without limitation tarpaulin material.

It is a still further object of the present invention to provide a flexible mixing mat with expandable corners having an apex wherein each apex is adapted to create a folding point and wherein pairs of said apexes form folding lines.

It is a still further object of the present invention to provide a method of mixing ingredients using a flexible mixing mat comprising a geometrically-shaped

planar substrate having four corner areas; four expandable corners coupled to said four corner areas, respectively; and, oblong apertures wherein a respective oblong aperture is formed in a respective one of said  
5 four expandable corners and forms a handle, said method comprising the steps of:

(a) placing a given amount of a first ingredient of a mixture substantially in a center of said geometrically-shaped planar substrate;

10 (b) adding a given amount of a second ingredient to said first ingredient to create a mixture;

(c) lifting said geometrically-shaped planar substrate by said handle means of each expandable corner; and,

15 (d) agitating said geometrically-shaped planar substrate until substantially said mixture of said first and second ingredients is substantially dissolved or homogenous forming a mixed mixture.

20 It is a still further object of the present invention to provide a method further comprising the step of: (e) tilting said geometrically-shaped planar

substrate and pouring the mixed substance.

It is a still further object of the present invention to provide a method for mixing cement wherein said first ingredient is a dry pre-blended cement  
5 composition, said second ingredient is water, said mixture is a slurry and said mixed mixture is cement.

It is a still further object of the present invention to provide a method of mixing ingredients which are essentially dry and do not require water.

10 In view of the above objects, it is a feature of the present invention to provide a flexible mixing mat which is easy to use.

Another feature of the present invention is to provide a flexible mixing mat which is relatively simple  
15 structurally and thus simple to manufacture.

It is another feature of the present invention to provide a flexible mixing mat which enhances the control of the mixture or slurry placed thereon via expandable corners from which the mat is held.

20 The above and other objects and features of the present invention will become apparent from the drawings, the description given herein, and the appended claims.

## BRIEF DESCRIPTION OF THE DRAWING

For a further understanding of the nature and objects of the present invention, reference should be had to the following description taken in conjunction with the accompanying drawings in which like parts are given like reference numerals and, wherein:

**FIGURE 1** illustrates a top view of the flexible mixing mat of the preferred embodiment of the present invention;

**FIGURE 2** illustrates a side view of the flexible mixing mat of the preferred embodiment of the present invention;

**FIGURE 3** illustrates a perspective view of the flexible mixing mat of the preferred embodiment of the present invention;

**FIGURE 4a** illustrates the initial positioning of the cement for carrying out the method of mixing the cement;

**FIGURE 4b** illustrates the rolling of the cement in one direction for carrying out the method of the present invention;

**FIGURE 4c** illustrates the rolling of the cement in another direction for carrying out the method of the present invention;

**FIGURE 5a** illustrates the twisting movement of the wrist in a first direction for manipulating the flexible mixing mat; and,

**FIGURE 5b** illustrates the twisting movement of the wrist in a second direction for manipulating the flexible mixing mat;

**FIGURE 6** is a top plan view of an alternate embodiment (in use) of the flexible mixing mat of **FIGURE 1**;

**FIGURE 7** is an enlarged plan view of an expandable corner and handle means of the embodiment of **FIGURE 6**;

**FIGURE 8** is a cross-sectional view taken through the Line 8 - 8 of **FIGURE 7**;

**FIGURE 9** is a top perspective view of an expandable corner and handle of the embodiment **FIGURE 6**;

**FIGURE 10** is a top perspective view of the spacer member of the handle means of the embodiment **FIGURE 6**;

**FIGURE 11** is a cross-sectional view through the Line 8 - 8 of **FIGURE 7**, but with an alternate fastening means;

**FIGURE 12** is the top perspective view of the expandable corner and handle means seen in **FIGURE 9**, but with an alternate fastening means.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring now to the drawing and in particular **FIGURES 1 - 3**, the flexible mixing mat of the preferred embodiment of the present invention is generally referenced by the numeral 10. In general flexible mixing mat 10 is designed to mix dry cement compositions or other granular mixtures which may require a fluid additive. Nevertheless, the flexible mixing mat can be used to mix other compositions which can be mixed by folding, shaking and/or agitation so that the composition becomes essentially homogenous and/or dissolved. For illustrative purposes, flexible mixing mat 10 is used for mixing dry pre-blended cement compositions 5.

In the preferred embodiment, flexible mixing mat 10 comprises a geometrically-shaped planar substrate 20 (being of either a rectangular or ovoid shape) made of

flexible and waterproof material. Flexible mixing mat 10 has four (4) expandable corners 21a, 21b, 21c and 21d and four (4) oblong apertures 25a, 25b, 25c and 25d formed in such expandable corners 21a, 21b, 21c and 21d, respectively. The four (4) expandable corners 21a, 21b, 21c and 21d are truncated such that the otherwise point of the corners are eliminated and preferably, truncated to created rounded corners. The four (4) oblong apertures 25a, 25b, 25c and 25d are arranged in such a manner with respect to the rounded four (4) expandable corners 21a, 21b, 21c and 21d so that handles 27a, 27b, 27c, and 27d, respectively, are formed. Thereby, the user or users are capable of placing their hands in the four (4) oblong apertures 25a, 25b, 25c and 25d and lift the geometrically-shaped planar substrate 20.

In the preferred embodiment, the geometrically-shaped planar substrate 20 is essentially a rectangularly shaped and is fifty four (54") inches wide and eighty four (84") inches long. Nevertheless, the geometrically-shaped planar substrate 20 may be square shaped or any other shape.

The expandable capability of the four expandable



corners 21a, 21b, 21c and 21d is created by pleated flexible members 40a, 40b, 40c, and 40d, respectively, inserted in a respective one of triangularly-shaped notches 30a, 30b, 30c, and 30d formed in the geometrically-shaped planar substrate 20 at the corners thereof whereby the corners are not truncated by instead are removed. The triangularly-shaped notch 30 is created by the removal of a triangularly-shaped portion of the geometrically-shaped planar substrate 20.

Since each triangularly-shaped notch is essentially identical, only one such triangularly-shaped notch will be described in detail. Triangularly-shaped notch 30a includes apex A1 positioned distance D1 from edge and a distance D2 from edge 52 of geometrically-shaped planar substrate 20.

In the preferred embodiment, triangularly-shaped notch 30a forms a notch which is an acute angled notch. Nevertheless, the triangularly-shaped notch may be a right angled notch. Moreover, in the preferred embodiment, leg 32 of the triangularly-shaped notch 30a is essentially perpendicular to edge 52 of the geometrically-shaped planar substrate 20 while leg 31 of

the triangularly-shaped notch 30a angularly intersects edge 51 of the geometrically-shaped planar substrate 20.

Since each pleated flexible member is essentially identical, only one such pleated flexible member will be described in detail. Pleated flexible member 40b is made of flexible material essentially triangularly-shaped. In the preferred embodiment, instead of a generally flat or linearly straight base of the triangularly-shaped pleated flexible member 40b, the base 41 is rounded. Oblong aperture 25b is formed in the triangularly-shaped pleated flexible member 40b whereby the longitudinal center of oblong aperture 25b is essentially aligned with apex A2. Apex A2 is the apex of triangularly-shaped notch 30b.

While not wishing to be bound by theory, it is believed that the advantageous results of the invention are obtained because apexes A1, A2, A3 and A4 provide automatic folding points from which the geometrically-shaped planar substrate 20 will tend to fold that portion thereof from apexes A1, A2, A3 and A4 to edges 51 and 52 and/or their parallel counter-edges upward as the geometrically-shaped planar substrate 20 is lifted about handles 27a, 27b, 27c and 27d. This folding is also in

part due to the longitudinal centering of the oblong apertures 25a, 25b, 25c and 25d with apexes A1, A2, A3 and A4.

As will be described more clearly, the  
5 geometrically-shaped planar substrate 20 will not always fold exactly about apexes A1, A2, A3 and A4 because of the deformable nature of the cement when being mixed. However, when manipulating geometrically-shaped planar substrate 20, as the deformable cement moves closer to  
10 edge 51, geometrically-shaped planar substrate 20 will tend to fold about apexes A1 and A4 so that the cement during mixing does not fall to the ground.

Pleated flexible member 40 includes a plurality of pleats 45, as best seen in FIGURES 5a and 5b, arranged in  
15 a manner similar to that of a fan. In the exemplary embodiment, the distance between A1 and A2 is approximately thirty (30") inches and the distance between A1 and A4 is approximately forty four (44") inches. The surface area between apexes A1, A2, A3 and  
20 A4 is the primary mixing area to be used during the mixing process.

While not wishing to be bound by theory, it is

believed that the advantageous results of the invention are obtained because of pleated flexible member 40 defined by the plurality of pleats 45 wherein the expandable properties inherent in the fanning of the plurality of pleats 45 enhances the overall control and the overall range of manipulation of flexible mixing mat 10 during the mixing process.

The preferred embodiment of flexible mixing mat 10 is made of a rectangular piece of tarpaulin. The aperture edge defining each of the four (4) oblong apertures 25a, 25b, 25c and 25d is preferably reenforced.

Referring now to FIGURES 6 - 12, the flexible mixing mat of the alternate embodiment of the present invention is generally referenced by the numeral 60.

In the alternate embodiment, flexible mixing mat 60 comprises a geometrically-shaped planar substrate 20' substantially identical to substrate 20 of mat 10 of the preferred embodiment. Flexible mixing mat 60 has four (4) expandable corners 21a', 21b', 21c', 21d' and four (4) handle means 77a, 77b, 77c and 77d connected to such expandable corners 21', respectively. The four (4) expandable corners 21' are truncated to created rounded

corners. The four (4) handle means 77 are connected in such a manner with respect to the rounded four (4) expandable corners 21' whereby the user or users are capable of grasping with their hands the four (4) handles  
5 77 and lift the geometrically-shaped planar substrate 20'.

The expandable capability of the four expandable corners 21' is created by the same pleating inserted in triangularly-shaped notches formed in the geometrically-  
10 shaped planar substrate 20' at the corners thereof whereby the corners are not truncated but instead are removed.

In alternate embodiment 60 an aperture 75 is formed in the triangularly-shaped pleated flexible member 40  
15 whereby the longitudinal center of aperture 75 is essentially aligned with apex A. The aperture edge defining each of the four (4) oblong apertures 75 is preferably reenforced.

Apex A2 is the apex of triangularly-shaped notch 30b.  
20 Thus the same apexes A1, A2, A3 and A4 provide automatic folding points from which the geometrically-shaped planar substrate 20' will tend to fold that portion thereof from

apexes A1, A2, A3 and A4 to the edges and/or their parallel counter-edges upward as the geometrically-shaped planar substrate 20' is lifted about handle means 77. This folding is also in part due to the longitudinal centering of the apertures 75, and thus handle means 77, with apexes A1, A2, A3 and A4.

Handle means 77 of the alternate embodiment 60 comprises a generally U-shaped channel 78 defining gap 76 between its sides. A transverse slot 74 is provided through channel 78 near its proximate or outer end to aid the user in grasping mat 60 for mixing operations and an aperture 82 is provided through channel 78 near the center region thereof. Both slot 74 and aperture 82 pass through both sides of channel 78 in alignment. A spacer member 72, best seen in FIGURE 10, is provided in gap 76 to reinforce handle means 77 and its connection to substrate 20'. Spacer member 72 has two opposing sides 90 and two opposing truncated sides 92 and is open at the top and bottom and has an aperture 94 passing through sides 90 in alignment and in alignment with aperture 82 in channel 78. Grommets 83, passing through apertures 82 and 94 in each side of channel 78 fix spacer member 72 in

gap 76.

Thus, as is best illustrated in FIGURES 7 and 8,  
when spacer member 72 is positioned in gap 76 and  
respective corner 21' is inserted in spacer member 72  
5 such that apertures 82 and 94 align with aperture 75 in  
respective corner 21', a fastening means can be placed  
therethrough to connect handle means 77 to corner 21'.  
Handle means 77 and spacer member 72 may be made of  
either plastic or metal.

10 In FIGURES 7 - 9 a conventional cotter pin 79 is the  
fastening means and has a head 86 and integral prongs 84,  
prongs 84 being bent over on one side of channel 78 to  
secure the connection of handle means 77 to corner 21'.  
In FIGURES 11 - 12 a conventional expandable rubber plug  
15 97 is the fastener means and has a body integral with  
bulbous ends 98 which protrude from aperture 82 to  
prevent removal so as to secure the connection of handle  
means 77 to corner 21'.

Referring now to FIGURES 4a - 4c, the preferred  
20 embodiment of the method of the present invention (and  
therefore, the operation of flexible mixing mats 10 and  
60, although only mat 10 will be used for describing the

method) has the following steps (not necessarily in the order listed, as variations can take place):

1. A given amount of "ready mix" concrete 5 is place on geometrically-shaped planar substrate 20 in the area between A1 - A4, as best seen in FIGURE 3;

2. Water is added, such as via a hose 2 (FIGURE 3) so that approximately 2 gallons are mixed with a standard industrial bag of "ready mix" (90 lb.) resulting in slurry 6 on geometrically-shaped planar substrate 20;

3. Two workmen each grasp one side of geometrically-shaped planar substrate 20 by pairs of handles 27a, 27b and 27c, 27d and lift so that geometrically-shaped planar substrate 20 is about waist-high and takes the shape illustrated in FIGURE 4a (one workman can accomplish this by tying the opposing handles to a hook inserted in a wall at waist level);

4. Violently agitating geometrically-shaped planar substrate 20 for about 15 - 30 seconds or until substantially all the "ready mix" is dissolved; and,

5. Tilting geometrically-shaped planar substrate 20 and pouring the mixed slurry 6 (now concrete) at the desired situs.



As best seen in FIGURES 4b and 4c, the violently  
agitating may be carried out by rolling slurry 6 from one  
end to another by lifting an opposing end above the other  
end. Moreover, as best seen in FIGURES 5a and 5b, the  
5 violently agitating may also include rotating the wrist  
in the direction of ARROW 1 and/or ARROW 2 so that the  
slurry 6 will be rolled side to side or in other words in  
the direction of edge 51 and/or its opposing parallel  
edge.

10 When pouring the mixed slurry 6, edge 51 or its  
parallel opposing edge of geometrically-shaped planar  
substrate 20 may be used.

In summary, the method of mixing a mixture using my  
flexible mixing mat 10 comprising a geometrically-shaped  
15 planar substrate having four corner areas; four  
expandable corners coupled to said four corner areas,  
respectively; and, oblong apertures wherein a respective  
oblong aperture is formed in a respective one of said  
four expandable corners and forms a handle, comprises in  
20 general the steps of:

- (a) placing a given amount of a first ingredient of  
a mixture substantially in a center of

geometrically-shaped planar substrate 20;

(b) adding a given amount of a second ingredient to said first ingredient to create the mixture;

(c) lifting geometrically-shaped planar substrate 20 by handles 27a, 27b, 27c, and 27d of each expandable corner 21a, 21b, 21c, and 21d; and,

(d) agitating geometrically-shaped planar substrate 20 until said mixture of said first and second ingredients is substantially dissolved or homogenous forming a mixed mixture.

The method further includes the step of: (e) tilting said geometrically-shaped planar substrate and pouring the mixed mixture.

As can be readily seen, using the method to create concrete would require said first ingredient to be a dry pre-blended cement composition, said second ingredient to be water, said mixture to be a slurry and said mixed mixture would then be cement.

Thus for cement, the step of (d) includes the steps of: (d1) rolling slurry 6 from one end of geometrically-shaped planar substrate 20 to another end thereof by lifting said one end above said another end; and, (d2)

rolling said slurry 6 by rotating at least a pair of said four expandable corners 21a and 21b and/or 21c and 21d from one side of geometrically-shaped planar substrate 20 to another side thereof.

5           The step of (c) comprises the step of: (c1) lifting geometrically-shaped planar substrate 20 approximately waist-high.

          The step of (c) may alternately comprise the steps of: (c1) securing a first pair of said four expandable  
10       corners by placing a first respective pair of said oblong apertures on hooking members; and, (c2) placing a pair of hands in a second pair of said oblong apertures and lift said geometrically-shaped planar substrate.

          As can be seen, flexible mixing mat 10 and its  
15       method of use allow quick and easy mixing of "ready mix" concrete without bulky and costly tools and little lifting and no blisters. While the exemplary embodiment describes in detail the mixing of concrete, other mixtures may be likewise mixed.

20           Because many varying and differing embodiments may be made within the scope of the inventive concept herein taught and because many modifications may be made in the

embodiment herein detailed in accordance with the descriptive requirement of the law, it is to be understood that the details herein are to be interpreted as illustrative and not in a limiting sense.

5           What is claimed as invention is:

1. A flexible mixing mat comprising:

(a) a geometrically-shaped planar substrate having four corner areas;

5 (b) four expandable corners coupled to said four corner areas, respectively; and,

(c) handle means formed in a respective one of said four expandable corners from which said geometrically-shaped planar substrate is adapted to be lifted.

10 2. The mat of CLAIM 1, wherein said handle means comprises oblong apertures wherein a respective oblong aperture is formed in a respective one of said four expandable corners.

15 3. The mat of CLAIM 2, wherein each corner area of said four corner areas of said geometrically-shaped planar substrate has formed therein a triangularly-shaped notch having an apex located a distance from an edge of said geometrically-shaped planar substrate; and

20 wherein each expandable corner of said four expandable corners comprises a pleated flexible member expandable greater than said triangularly-shaped notch wherein said pleated flexible member has formed therein

said respective oblong aperture and wherein a center of a longitudinal length of said oblong aperture is substantially aligned with said apex.

4. The mat of CLAIM 3, wherein said geometrically-shaped planar substrate is rectangularly shaped and said  
5 triangularly-shaped notch is an acute angle notch having one leg perpendicular to a short edge of said geometrically-shaped planar substrate.

5. The mat of CLAIM 2, wherein said geometrically-shaped planar substrate is made of flexible and  
10 waterproof material.

6. The mat of CLAIM 2, wherein said geometrically-shaped planar substrate is made of tarpaulin material.

7. The mat of CLAIM 2, wherein each corner area of  
15 said four corner areas of said geometrically-shaped planar substrate has formed therein a triangularly-shaped notch having an apex a distance from an edge of said geometrically-shaped planar substrate wherein said apex of said triangularly-shaped notch of said each corner  
20 area of said four corner areas is adapted to create a folding point and wherein pairs of said apexes form folding lines.

8. A flexible mixing mat comprising:

(a) a geometrically-shaped planar substrate having four corner areas wherein each corner area of said four corner areas has formed therein a triangularly-shaped notch having an apex located a distance from an edge of said geometrically-shaped planar substrate;

(b) four expandable corners coupled to said four corner areas, respectively wherein each expandable corner of said four expandable corners comprises a pleated flexible member expandable greater than said triangularly-shaped notch wherein said pleated flexible member; and

(c) handle means connected to a respective one of said four expandable corners from which said geometrically-shaped planar substrate is adapted to be lifted wherein the point of said connection of said handle means to said one of said corners is substantially aligned with said apex.

9. The mat of CLAIM 8, wherein said geometrically-shaped planar substrate is rectangularly shaped and said triangularly-shaped notch is an acute angle notch having one leg perpendicular to a short edge of said geometrically-shaped planar substrate.

10. The mat of CLAIM 8, wherein said geometrically-shaped planar substrate is made of flexible and waterproof material.

11. The mat of CLAIM 8, wherein said geometrically-shaped planar substrate is made of tarpaulin material.

12. The mat of CLAIM 8, wherein said apex of said triangularly-shaped notch of said each corner area of said four corner areas is adapted to create a folding point and wherein pairs of said apexes form folding lines.

13. The mat of CLAIM 8, wherein said handle means comprises:

(a) a U-shaped channel having an aperture through its center region for alignment with an aperture in a respective one of said four expandable corners;

(b) fastening means passing through said aligned apertures for connecting said corner to said channel;



and,

(c) a transverse slot provided in the proximate end of said channel for grasping by a user of said mat.

14. The mat of CLAIM 13, wherein said fastener is  
5 an elongated pin having a head integral with two prongs which can be bent after passing through said aligned apertures.

15. The mat of CLAIM 13, wherein said fastener is an rubber plug having end portions which expand after  
10 passing through said aligned apertures to prevent removal thereof.

16. A method of mixing using a flexible mixing mat comprising a geometrically-shaped planar substrate having four corner areas; four expandable corners coupled to  
15 said four corner areas, respectively; and, handle means formed in a respective one of said four expandable corners, said method comprising the steps of:

- 20
- (a) placing a given amount of a first ingredient of a mixture substantially in a center of said geometrically-shaped planar substrate;
  - (b) adding a given amount of a second ingredient to said first ingredient to create a mixture;

(c) lifting said geometrically-shaped planar substrate by said handle means of each expandable corner; and,

5 (d) agitating said geometrically-shaped planar substrate until substantially said mixture of said first and second ingredients is substantially dissolved or homogenous forming a mixed mixture.

10 17. The method of CLAIM 16, further comprises the step of:

(e) tilting said geometrically-shaped planar substrate and pouring the mixed substance.

15 18. The method of CLAIM 17, wherein said first ingredient is a dry pre-blended cement composition, said second ingredient is water, said mixture is a slurry and said mixed mixture is cement.

19. The method of CLAIM 18, wherein said step of (d) includes the steps of:

20 (d1) rolling said slurry from one end of said geometrically-shaped planar substrate to another end thereof by lifting said one end above said another end; and,

(d2) rolling said slurry by rotating at least a pair of said four expandable corners from one side of said geometrically-shaped planar substrate to another side thereof.

5           20. The method of CLAIM 18, wherein said step of  
(c) comprises the step of:

(c1) lifting said geometrically-shaped planar substrate approximately waist-high.

10           21. The method of CLAIM 18, wherein said step of  
(c) comprises the steps of:

(c1) securing a first pair of said four expandable corners by placing a first respective pair of said oblong apertures on hooking members; and,

15           (c2) placing a pair of hands in a second pair of said oblong apertures and lift said geometrically-shaped planar substrate.

ABSTRACT OF THE DISCLOSURE

A flexible mixing mat comprising a geometrically-shaped planar substrate having four corner areas which have been removed and replaced with four expandable  
5 corners coupled to the four corner areas, respectively. Each expandable corner, a pleated flexible member, expands greater than that area having been removed. Further included are handles formed in or connected to each expandable corner. A method of using the flexible  
10 mixing mat to mix ingredients such as ingredients for creating cement is provided.

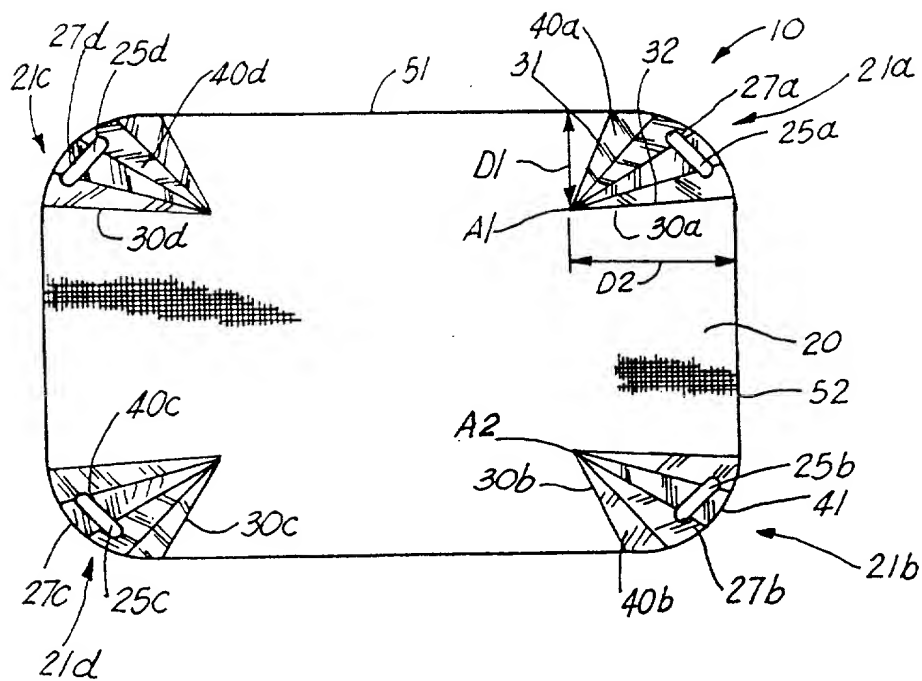


FIG. 1

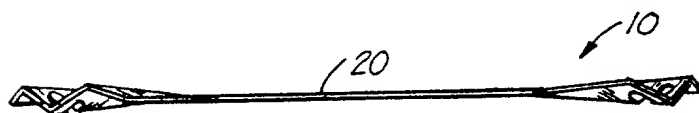


FIG. 2

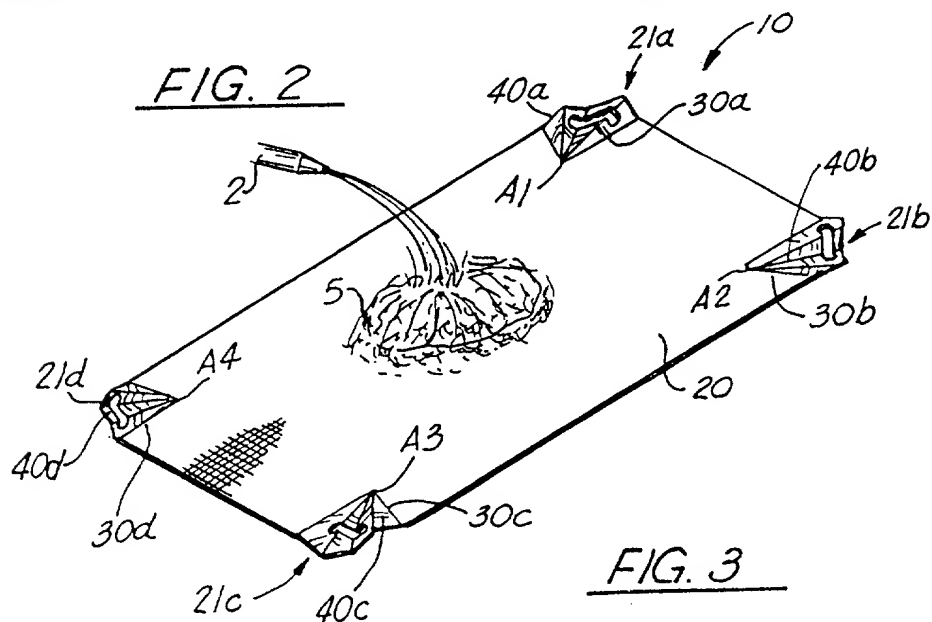


FIG. 3

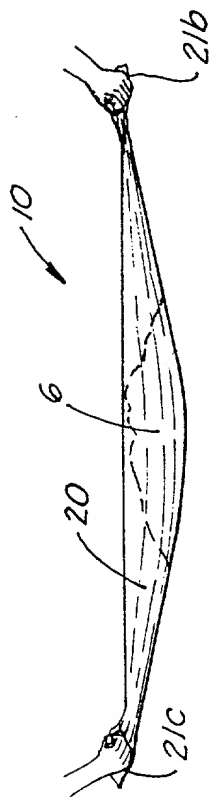


FIG. 4a

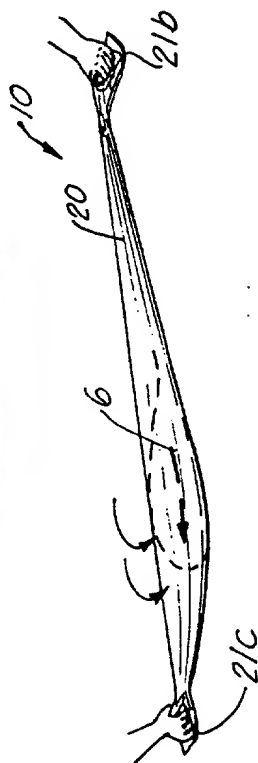


FIG. 4b



FIG. 4c

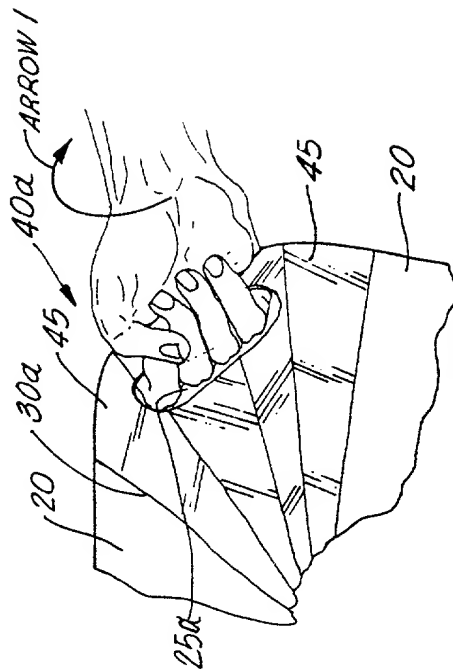


FIG. 5a

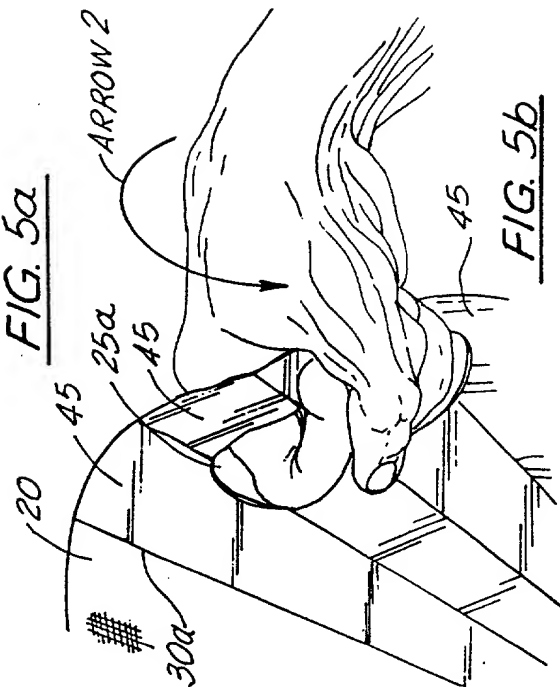


FIG. 5b







DECLARATION IN COPENDING APPLICATION CONTAINING  
ADDITIONAL SUBJECT MATTER - PAGE 1 OF 2

ATTORNEY'S DOCKET  
NO.: R-98-5670-U.1-CIP

I, the below-named inventor, hereby declare that:  
My residence, post office address and citizenship are as stated below next to my name;  
that I verily believe I am the original, first and sole inventor if only one name is listed below,  
or a joint inventor if plural inventors are named below, of the invention entitled:

**"Flexible Mixing Mat And Method Of Use"**

which is described and claimed in the attached specification;

that this application in part discloses and claims subject matter disclosed in my earlier filed  
pending application: U.S. Serial No. 09/365,630, filed August 2, 1999, and assigned to RALPH  
HEIDLER and WALTER RIDDLE (A Florida Partnership);

that I specifically acknowledge my duty to disclose material information as defined in 37 CFR  
§ 1.56(a) which occurred between the filing date of the prior application and the filing date  
of this continuation-in-part application which discloses and claims subject matter in addition  
to that disclosed in the prior application (37 CFR § 1.63(d)). I was aware of this duty before  
I signed the "Declaration And Power Of Attorney - Original Application," originally filed with  
the application.

that I acknowledge my duty to disclose information of which I am aware which is material to the  
examination of this application;

that I have reviewed and understand the contents of the specification, including the claims;  
that as to the subject matter of this application which is common to said earlier application, I  
do not know and do not believe that the same was ever known or used in the United States of  
America before my or our invention thereof or patented or described in any printed  
publication in any country before my or our invention thereof, or more than one year prior to  
said earlier application, or in public use or on sale in the United States of America more than  
one year prior to said earlier application;

that the common subject matter has not been patented or made the subject of an inventor's  
certificate issued before the date of said earlier application in any country foreign to the  
United States of America on an application filed by me or my legal representatives or assigns  
more than twelve months prior to said earlier application; and

as to applications for patents or inventor's certificate on the common subject matter filed in any  
country foreign to the United States of America, prior to said earlier application by me or my  
legal representatives or assigns,

(XX) no such applications have been filed, or

( ) such applications have been filed as follows:

EARLIEST FOREIGN APPLICATION(S), IF ANY, FILED WITHIN 12 MONTHS PRIOR TO SAID EARLIER APPLICATION

COUNTRY	APPLICATION NUMBER	DATE OF FILING (DAY, MO., YR.)	DATE OF ISSUE (DAY, MO., YR.)	PRIORITY CLAIMED UNDER 35 USC 119
				YES ( ) NO ( )
				YES ( ) NO ( )

ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS PRIOR TO SAID EARLIER APPLICATION


that as to the subject matter of this application which is not common to said earlier applica-  
tion, I do not know and do not believe that the same was ever known or used in the United  
States of America before my or our invention thereof or patented or described in any printed  
publication in any country before my or our invention thereof, or more than one year prior  
to this application, or in public use or on sale in the United States of America more than  
one year prior to this application;

that said non-common subject matter has not been patented or made the subject of an inventor's  
certificate issued before the date of this application in any country foreign to the United  
States of America on an application filed by me or my legal representatives or assigns more  
than twelve months prior to this application; and

as to applications for patents or inventor's certificate on the invention filed in any country  
foreign to the United States of America prior to this application by me or my legal  
representatives or assigns,

(XX) no such applications have been filed, or

( ) such applications have been filed as follows:

EARLIEST FOREIGN APPLICATION(S), IF ANY, FILED WITHIN 12 MONTHS PRIOR TO THIS APPLICATION

COUNTRY	APPLICATION NUMBER	DATE OF FILING (DAY, MO., YR.)	DATE OF ISSUE (DAY, MO., YR.)	PRIORITY CLAIMED UNDER 35 USC 119
				YES ( ) NO ( )
				YES ( ) NO ( )

ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS PRIOR TO THIS APPLICATION


DECLARATION IN COPENDING APPLICATION CONTAINING  
ADDITIONAL SUBJECT MATTER - PAGE 2 OF 2

ATTORNEY'S DOCKET  
NO.: R-98-5670-U.1-CIP

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration no.)

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City

State & Zip Code/Country

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR

*Ralph Haidler*

SIGNATURE OF INVENTOR

SIGNATURE OF INVENTOR

DATE

7-11-00

DATE

DATE